

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and lists of claims in the application:

1-8. (Cancelled)

9. (Currently Amended) A method for treating a patient with degenerating cholinergic neurons [~~in a patient in need of same~~] comprising administering Bone Morphogenetic Protein-9 (BMP-9) ~~to said patient a pharmaceutical composition comprising an amount of BMP-9 in a pharmaceutically acceptable vehicle in an amount sufficient to~~ increase the levels of choline acetyltransferase in the nervous system of the patient ~~induce differentiation of progenitor cells into cholinergic neurons.~~

10. (Cancelled)

11. (Currently Amended) A method for upregulating the expression of genes for choline acetyltransferase in a patient ~~in need of same~~ comprising administering a ~~pharmaceutical composition comprising an amount of a BMP-9~~ in an amount ~~protein in a pharmaceutically acceptable vehicle~~ sufficient to upregulate the genes for choline acetyltransferase expression in said patient.

12. (Currently Amended) A method for upregulating vesicular acetylcholine transporter in a patient ~~in need of same~~ comprising administering a ~~pharmaceutical composition comprising an amount of a BMP-9~~ in an amount ~~protein in a pharmaceutically acceptable vehicle~~ sufficient to upregulate vesicular acetylcholine transporter expression in said patient.

13. (Cancelled)

14. (Currently Amended) A method for treating a patient with degenerating motor neurons ~~in a patient in need of same~~ comprising administering ~~to said patient an~~ amount of a BMP-9 composition in an amount sufficient to increase the levels of choline acetyltransferase in the nervous system of the patient ~~prevent degeneration of motor neurons in said patient.~~

15-17. (Cancelled)

18. (New) A method for treating a patient with degenerating cholinergic neurons comprising administering BMP-9 in an amount sufficient to increase the level of vesicular acetylcholine transporter in the nervous system of the patient.

19. (New) A method for preventing brain function loss and/or memory loss in a patient comprising administering BMP-9 in an amount sufficient to increase the levels of vesicular acetylcholine transporter in the nervous system of the patient.

20. (New) A method for preventing brain function loss and/or memory loss in a patient comprising administering BMP-9 in an amount sufficient to increase the levels of choline acetyltransferase in the nervous system of the patient.

21. (New) A method for treating a patient with degenerating motor neurons comprising administering BMP-9 in an amount sufficient to increase the levels of vesicular acetylcholine transporter in the nervous system of the patient.